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MEMORANDUM

To: Heads of Fire Departments
From: Stephen D. Coan
State Fire Marshal
Date: November 30, 2009
RE: Updates to 527 CMR

Please find attached hereto copies of three (3) new regulatory changes from the Board of Fire Prevention Regulations.

The first regulation, which was filed on an emergency basis, delays the implementation of 527 CMR 10.13, which required the designation of a "crowd manager" by those who own/operate A-2 use group buildings (ex.: nightclubs, dancehalls and bars) to assure the safety of the occupants and complete a safety checklist as prescribed by the Marshal.

The second regulation, replaces 527 CMR 10.15 with new language that enhances public safety during floor refinishing activities. The regulation requires a permit (but no mandated inspection) from the head of the fire department for most refinishing activities. A notification/letter only is required for the smaller residential buildings (single family and other buildings up to 4 units). It also requires that certain precautions be taken to reduce or eliminate the risk of explosion or fire associated with such activity, including the posting of signs. The effective date of this regulation is 6-1-10.

The third regulation, 527 CMR 22.00: Cannons and Mortars, relates to the regulations for firing muzzle-loading cannons during events such as historical ceremonies and re-enactments. It contains many amendments, which improve readability and update safety standards and references to other applicable and related codes.

If you have any please contact the Code Compliance and Enforcement Unit at 978-567-3375 or in Western MA at 413-587-3181.

SDC/bhs

Administrative Services • Hazardous Materials Response
Massachusetts Firefighting Academy • Office of the State Fire Marshal

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527 CMR 10.00: FIRE PREVENTION, GENERAL PROVISIONS

Section

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10.01: Definitions

For the purpose of 527 CMR 10.00, the following terms shall have the meanings respectfully assigned to them:

ANSI. The American National Standards Institute

Approved. Approved by the State Fire Marshal.

Authority Having Jurisdiction. The head of the fire department.

Bulk Merchandising Retail Buildings. A building where sales areas contain:

- (a) Combustible materials in piles greater than 12 feet in height or combustible materials on pallets, in racks or on shelves where the top of storage is greater than 12 feet in height or
- (b) Combustible materials such as rubber tires, Group A plastics, flammable liquids, idle pallets and commodities with similar heat release characteristics where the top of storage is greater than six feet in height.

D.E.P. Massachusetts Department of Environmental Protection.

Fire Protection System. Shall include any devices, equipment and systems used to detect a fire, activate an alarm, suppress or control a fire or any combination thereof.

Fumigant. Includes any substance which by itself or in combination with any other substance emits or liberates a gas, fume or vapor used for the destruction or control of insects, fungi, vermin, germs, rats, or other pests, and shall be distinguished from insecticides and disinfectants which are essentially effective in the solid or liquid phases. Examples are methyl bromide, ethylene dibromide, hydrogen cyanide, carbon disulphide and sulfuryl fluoride.

Fumigation. The use within an enclosed space of a fumigant in concentrations which may be hazardous or acutely toxic to people.

10.01: continued

Hospital. A building used as a hospital or sanatorium, a convalescent or nursing home, or an infirmary, as such terms are defined in M.G.L. c. 111, § 71, and licensed as such occupancies.

High Hazard Occupancies. Those having contents which are liable to burn with extreme rapidity or from which poisonous fumes or explosions are to be feared in the event of fire.

Low Hazard Occupancies. Those having contents of such low combustibility that no self propagating fire therein can occur and that consequently the only probable danger will be from panic, fumes or smoke, or fire from some external source.

Open Air Parking Spaces. A place which may be occupied by an automobile or by a component which may be attached to or transported by an automobile, trailer or semi-trailer as defined in M.G.L. c. 90 and c. 148, § 56.

Nationally Recognized Testing Laboratory (NRTL). An organization which tests for safety and lists, labels or accepts equipment or materials and which meets the criteria in 527 CMR 49.00 (Appendix C).

Ordinary Hazard Occupancies. Those having contents which are liable to burn with moderate rapidity and to give off a considerable volume of smoke, but from which neither poisonous fumes nor explosions are to be feared in case of fire.

Place of Assembly. A room or space accommodating 50 or more individuals for religious, recreational, educational, political, social or amusement purposes, or for the consumption of food or drink, including all connected rooms or space with a common means of egress and entrance.

School. Any building or premises in which a regular course of public or private instruction is afforded to not less than ten pupils at one time, or to kindergartens, pre-primary or nursery schools where ten or more children are enrolled for instruction or care.

Smoking. Possessing a lighted cigarette, cigar, pipe, or other smoking article.

Thermal Insecticidal Fogging. The use of insecticidal liquids which are passed through thermal fog-generating units where they are, by means of heat, pressure and turbulence, transformed and discharged in the form of a fog or mist that is blown into an area to be treated.

10.02: Fire Extinguishers

(1) Any building or other premises, which, due to its location, construction, character or occupancy, or the manner of conducting business therein or thereupon is such that it is considered necessary by the head of the fire department, shall be provided with portable fire extinguishers installed and maintained in accordance with NFPA 10.

(2) Every school, college and university laboratory newly constructed or renovated, or any room used for similar purposes wherein corrosives or flammable liquids are handled or where open flame devices are used, shall be equipped with one or more Emergency Wash Systems. Emergency Wash Systems shall include Drench/Deluge Showers, Hand Held Body/Face Washers and Deck Mounted Drench Hoses. The permanently mounted showers shall be located as close to the main door of the laboratory as possible (to provide an escape route), but should not be located greater than 50' from an experimental area. The permanently mounted showers shall be capable of discharging a continuous spray at a rate of 30 gallons per minute. Emergency Wash Systems shall be tempered to between 70° and 90°F. Cold potable water shall be permitted in those locations where tempered water is not accessible or as permitted by the head of the fire department.

The Drench/Deluge Showers, Hand Held Body/Face Washers and Deck Mounted Drench Hoses shall be installed in accordance with ANSI Z-358.1 and 248 CMR.

Each existing laboratory not equipped with an Emergency Wash System shall be equipped with at least one approved Fire Blanket, and a sign that reads:

10.13: continued

Exception: Temporary deviation from the specifics of the approved seating diagram shall be permitted provided the occupant load is not increased and the intent of 527 CMR 10.17 is maintained.

(c) Exit Announcements. The owner or operator of any business or activity located within a Place of Assembly classified as an A-1 or A-2 use group under 780 CMR, the State Building Code, shall make an audible announcement prior to the start of each program or performance that notifies occupants of the location of the exits to be used in case of a fire or other emergency.

Such announcement may be made in person or by recorded communication and shall be communicated in such a reasonable manner to assure that all persons in attendance are aware of the location of the exits. Owners or operators of assemblies involving video or cinema presentations may use such video or cinematic medium to communicate such audible announcement or projected image. Such announcement or projected image shall include the location of egress routes or areas of rescue assistance for use by persons with disabilities.

In addition to the audible announcements required by 527 CMR 10.13, if any written program, playbill or similar document is distributed prior to each program or performance, such document shall include a diagram of the location of all egress routes or areas of rescue assistance for use by persons with disabilities.

new date

(d) Designation of a Crowd Manager. Effective July 1, 2010, the owner or operator of the business or activity located in any Place of Assembly classified as an A-2 use group under 780 CMR, the State Building Code, shall designate a crowd manager.

The crowd manager shall be at least 21 years of age, shall be the owner or operator of the business or shall be under the direct control and supervision of said owner or operator. The crowd manager shall be responsible for the following:

1. maintaining clear exits, assuring that there is no overcrowding, initiating a fire alarm if necessary, directing occupants to exits; and
2. General fire and life safety awareness of employees and occupants, including assuring that exit announcements are made in accordance with 527 CMR 10.13(2)(c); and
3. Accurately completing the safety plan checklist required by 527 CMR 10.13(2)(e).

The crowd manager shall be knowledgeable about the responsibilities required in 527 CMR 10.13(2)(d) and (e). The Marshal shall develop training materials and the method to assure that said crowd managers are knowledgeable about their responsibilities.

new date

(e) Fire and Building Safety Checklist. Effective July 1, 2010, the crowd manager required by the provisions of 527 CMR 10.13(2)(d) shall be responsible for the completion of the Fire & Building Safety Checklist, as prescribed by the Marshal. This checklist shall include, but not be limited to, the routine safety check of existing fire protection systems, fire extinguishers, signage, interior finish, exits, unobstructed egress, crowd control procedures, employee training and building capacity restrictions. This checklist shall be completed as required by the Marshal and shall be kept on the premises for at least one year. The checklist shall be subject to inspection by the head of the fire department, the Marshal or their designee.

(3) Special Residential Use Group.

(a) Evacuation Plan. The administration of every facility shall have in effect and available to all supervisory personnel written copies of a plan for the protection of all persons in the event of fire and for their evacuation to areas of refuge and from the building when necessary. The plan shall include special staff actions including fire protection procedures needed to ensure the safety of any resident and shall be amended or revised upon admission to the home of any resident with unusual needs. All employees shall be periodically instructed and kept informed in respect to their duties and responsibilities under the plan. Such instruction shall be reviewed by the staff at least every two months. A copy of the plan shall be readily available at all times within the facility.

(b) Resident Training. All residents capable of assisting in their evacuations shall be trained in the proper actions to take in the event of a fire. The training shall include actions to take if the primary escape route is blocked. If the resident is being given rehabilitation, training in fire prevention and actions to take in the event of a fire shall be a part of the rehabilitation training program. Residents shall be trained to assist each other in case of fire to the extent their physical and mental abilities permit them to do so without additional personal risk.

10.13: continued

(c) Fire Exit Drills. Fire exit drills shall be conducted at least six times per year, two times a year on each shift. Twelve drills shall be conducted in the first year of operation. The drills are not required to be unannounced.

(d) Evacuation. Fire exit drills shall involve the actual evacuation of all residents to a selected assembly point and shall provide residents with experience in exiting through all required exits. All credited exits shall be used during fire drills.

Exception: Actual exiting from windows shall not be required to meet the requirements 527 CMR 10.13; opening the window and signaling for help shall be an acceptable alternative.

(4) Use Group I-2 -- Incapacitated Care.

(a) Evacuation Plan. The administration of every building of Use Group I-2 shall have in effect and available to all supervisory personnel written copies of a plan for the protection of all persons in the event of fire and for their evacuation to areas of refuge and from the building when necessary. All employees shall be periodically instructed and kept informed with respect to their duties under the plan. A copy of the plan shall be readily available at all times in the telephone operators position or at the security center.

(b) Bed Mobility. Every bed intended for use by health care occupants shall be easily movable under conditions of evacuation and shall be equipped with the type and size of casters to allow easy mobility, especially over elements of the structure such as expansion plates and elevator thresholds.

Exception: Beds intended for use in areas limited to patients such as convalescent, self-care, or mental health patients.

(c) Fire Exit Drills. Fire exit drills in buildings of Use Group I-2 shall include the transmission of a fire alarm signal and simulation of emergency fire conditions except that the movement of infirm or bed-ridden patients to safe areas or to the exterior of the building shall not be required. Drills shall be conducted quarterly on each shift to familiarize facility personnel with signals and emergency action required under varied conditions. At least 12 drills shall be held every year. When drills are conducted between 9:00 p.m. (2100 hours) and 6:00 a.m. (0600 hours), a coded announcement shall be permitted instead of audible alarms.

(d) Records. A record of all fire exit drills shall be kept on the premises and persons in charge of such occupancies shall file written reports at least twice a year with the head of the fire department giving the information listed in 527 CMR 10.09(4)(a).

(e) Employee Training. Employees shall be instructed in life safety procedures and devices.

(5) Use Group I-3 -- Restrained.

(a) Emergency Plan. The administration of every facility shall have in effect and provided to all supervisory personnel written copies of a plan for the protection of all persons in the event of fire and for their evacuation to areas of refuge and from the building when necessary. All employees shall be instructed and drilled with respect to their duties under the plan. The plan shall be coordinated with and reviewed by the head of the fire department.

(b) Employee Training. Employees shall be instructed in the proper use of portable fire extinguishers and other manual fire suppression equipment. With respect to new staff, such training shall be provided promptly upon entrance on duty. With respect to existing staff, refresher training shall be provided at least annually.

(c) All building of Use Group I-3, or those portions of buildings having such occupancy, shall be provided with 24 hour staffing. Staff shall be within three floors or 300' horizontal distance of the access door of each resident housing area. In Use Condition III, IV and V as defined in 780 CMR, the arrangement shall be such that the staff involved can start release of locks necessary for emergency evacuation or rescue and initiate other necessary emergency actions within two minutes of alarm.

(d) Notification. Provisions shall be made so that residents in Use Conditions III, IV, and V as defined in 780 CMR can readily notify staff of an emergency.

(e) Keys. All keys necessary for unlocking doors installed in means of egress shall be individually identified by both touch and sight.

10.13: continued

- (6) High Rise Buildings.
- (a) General. The owner or other person having charge of buildings identified as high-rise buildings in 780 CMR shall be required to prepare and submit to the head of the fire department for review and approval a fire safety plan and evacuation procedure as set forth in 527 CMR 10.13(6).
- (b) Fire Safety Plan. The fire safety plan shall be distributed to the tenants and building service employees by the owner or agent. Tenants shall distribute to their employees applicable parts of the fire safety plan which affect their action in the event of a fire or emergency.
- (c) Responsibility to Update Fire Safe Plan. It shall be the responsibility of the owner or agent to promptly update the fire safety and evacuation procedures upon changes in occupancy, use or physical arrangement.
- (7) Marking or Identifying Certain Buildings that are Especially Unsafe in the Case of Fire.
- (a) Any building determined to be especially unsafe in case of fire, under the provisions of 780 CMR 121.2 shall be identified and caused to be marked by the building official, with the cooperation of the head of the fire department, to indicate the degree of hazard.
- (b) In marking such buildings, the following symbols shall be used:
- ☐ This symbol shall mean that interior hazard exists to such a degree that interior operations shall be conducted with extreme caution. This symbol shall not in any way limit the discretion of the on scene Incident Commander in directing operations that the Incident Commander deems necessary.
 - ☒ This symbol shall mean that exterior or interior hazards exists to such a degree that consideration should be given to conduct operations from the exterior only. This symbol shall not in any way limit the discretion of the on scene Incident Commander in directing operations that the Incident Commander deems necessary.
- (c) Markings shall be applied on the front of the building at or above the second floor level, where practical, between openings such that they are visible from the street. Markings may be applied to the sides or the rear of a building if the head of the fire department deems such placement necessary. Markings shall also be applied in a conspicuous place near every entrance and on penthouses. Markings shall not be applied over doors, windows, or other openings where they may be obscured by smoke or fire.
- (d) Markings shall be a minimum of 24 inches by 24 inches. Markings shall either be on a placard with a reflective background or painted with a reflective paint of contrasting color directly on the surface of the building. Stripes and borders outside of the marking shall be a minimum of two inches wide.
- (e) All markings shall bear a date as to when applied or the date of the most recent inspection.
- (f) Prior to receiving a mark, all buildings shall be inspected thoroughly by the head of the fire department.

10.14: Hazard Abatement in Existing Buildings

- (1) General.
- (a) Scope. The provisions of 527 CMR 10.14 are to provide a reasonable degree of safety to persons occupying existing buildings that do not conform with the minimum requirements of 780 CMR by requiring the following alterations to such existing buildings.
- (b) Application of Other Codes. All alterations to an existing building which are caused directly or indirectly by the enforcement of 527 CMR 10.00 shall be done in accordance with the applicable procedures and provisions of 780 CMR, 248 CMR, the BOCA Mechanical Code and 527 CMR 12.00.
- (c) Continued Maintenance. All service equipment, means of egress devices and safeguards which are required by 527 CMR 10.00 or which were required by a previous statute or another regulation in a building or structure when erected, altered or repaired shall be maintained in good working order. The requirements of 527 CMR 10.14 are not to provide the basis for removal or abrogation of fire protection and safety systems and devices in existing buildings. These requirements are intended to require that existing buildings which do not comply with 527 CMR 10.00 be altered to provide a minimum level of safety as required herein.

10.14: continued

(2) Elevator Recall. Required. Elevator recall shall conform to the requirements of 524 CMR.

(3) Mechanical Equipment Control. Smoke and Heat Detection. Each recirculating air system which serves more than one floor in buildings which exceed six stories in height shall be equipped with approved smoke and heat detection devices in accordance with the BOCA Mechanical Code. The devices shall stop the fan(s) automatically and shall be of the manual reset type. Automatic fan shutdown is not required when the system is part of an approved smoke removal or control system, or hazardous exhaust system.

see Section:

10.15: Floor Finishing or Refinishing

(1) Specific Conditions.

(a) Scope. 527 CMR 10.15 shall apply to persons, or other entities that engage in sanding, finishing, or refinishing wood floors with or without compensation in any building or structure.

The equipment, processes and operation of floor finishing or refinishing operations shall comply with the applicable requirements of 527 CMR 10.00, 527 CMR 14.00 and 527 CMR 34.00.

(b) Permit Required. Effective June 1, 2010, any person or entity that performs wood floor finishing or refinishing operations involving the use and application of flammable liquids, as defined by 527 CMR 14.00, shall obtain a permit from the head of the fire department. Said permit shall indicate the name and address of the person performing the work and the address, date and time where such work is going to be performed.

Exception: For work in buildings classified as R-2 and containing less than four units or R-3, as defined in 780 CMR: *The Massachusetts State Building Code*, no permit shall be required provided that, a letter indicating the person who is going to perform the work, address, date and time where such work will be performed is forwarded to the head of the fire department at least 48 hours in advance of the proposed work, including changes to that date. The head of the fire department may waive or reduce the time of the written notice.

(2) Fire Safety Requirements. Effective June 1, 2010, every person applying any finishing or refinishing product to the floors in any building or structure must comply with the following fire/explosion safety requirements:

(a) Sources of Ignition. All fires, open flames or other sources of ignition, including smoking materials, shall be eliminated from the area or unit under the control of the finisher/refinisher prior to the application of any flammable finish or refinish material and until the product has sufficiently dried as determined by the manufacturer's specifications.

If any flammable liquids are used, all electric lights to be used during the work must be turned on before the liquids are brought onto the property and not turned off until the applied flammable liquids are dry to the touch and any remaining unused liquids have been removed from the property.

If any flammable liquids are used, no spotlights, halogen lights, drop lighting, or other lamps that create more heat than standard incandescent lighting may be used during floor finishing until the applied finish is dry to the touch.

(b) Electricity. Electrical equipment shall be designed and installed in accordance with 527 CMR 12.00: *Massachusetts Electric Code*. All power tools on the jobsite shall be properly grounded.

Electrical Permit Required. An electrical permit is required when connecting any floor refinishing machine directly to the electrical panel in accordance with 527 CMR 12.00.

(c) Appliances. If any flammable products are used, all appliances in the home or building unit that are under the control of the owner or tenant which have a standing pilot light or which can produce sparks must be turned off or disconnected before the flammable products are brought onto the property and for at least 24 hours after application. These appliances include, but are not limited to, the following:

1. All water heaters in the unit, including those in the basement
2. All pilot lights in the unit, including those in the stove and basement
3. All heaters, furnaces, and air conditioners in the unit
4. All refrigerators in the unit
5. All other appliances in the unit that might produce sparks

10.15: continued

(d) Warning Signs. Any person or other entity using flammable liquids for finishing or refinishing floors in a building containing more than one dwelling unit shall post suitable warning signs indicating the danger of fire/explosion and shall be conspicuously posted on all doors and entrances to the building and/or unit. Such notice is to be printed in contrasting colors and shall have lettering at least two inches high and should state the name of the operator in charge, the date and time of the operation and the area or unit where work is to be performed. Warning signs shall be posted at least 24 hours prior to engaging in such work.

No Smoking signs featuring the international pictograph prohibiting smoking, must be posted at all entrances to the house or building before floor sanding or finishing begins and until 24 hours after the end of all floor sanding and finishing activities.

(e) Ventilation. Adequate ventilation must be provided in accordance with the floor finish material manufacturer's instructions. If ventilation directly to the outdoors is not available or the refinisher is not able to comply with the floor finish manufacturer's instructions, the application of any flammable liquid is strictly prohibited

(3) Special Conditions.

(a) Storage of Flammable Liquids. Storage of flammable or combustible liquids in such rooms shall be in compliance with 527 CMR 14.00.

(b) Waste Materials. A metal waste can with a self closing cover shall be provided for all waste materials, including wood dust, and rags. All such materials shall be removed from the building and disposed of daily in accordance with local, state and federal regulations.

10.16: Dust Explosion Hazards

(1) General.

(a) Scope. Equipment, processes and operations which involve dust consisting of pulverized particles of any material which, if mixed with air in the proper proportions, becomes explosive and may be ignited by flame or spark shall comply with the applicable requirements of 527 CMR and the provisions of 527 CMR 10.16, and shall be maintained in accordance with NFPA 61, 65, 68, 69, 85F, 91, 490, 651, 653, 654, and 655 where provisions of 527 CMR 10.16 do not specifically cover conditions and operations.

(b) Permit Required. A permit shall be obtained from the head of the fire department for the operation of any grain bleacher or elevator; flour, starch or feed mill; malt house; wood flour manufacturing plant; or plant pulverizing aluminum, coal, cocoa, magnesium, spices, sugar or other material producing dust as defined in 527 CMR 10.16(1)(a).

(2) Fire Safety Requirements Precautions. Smoking and the carrying of matches, the use of heating or other devices employing an open flame, or use of any spark producing equipment shall be prohibited in areas containing dust producing or dust agitating operations. Artificial lighting in such areas shall be by electricity with all wiring and electrical equipment installed in accordance with 527 CMR 12.00: *Massachusetts Electrical Code*.

10.17: Places of Assembly

(1) General.

(a) Scope. The decoration, operation or use of places of assembly and education shall comply with the applicable requirements of 527 CMR 10.00 and 21.00 and 780 CMR.

(b) Permit Required. A place of assembly or one for educational use shall not be maintained, operated or used as such without a Certificate of Inspection from the building code official.

(c) Posting of Occupant Load. Each place of assembly or education shall be posted with an approved legible sign in contrasting colors conspicuously located near the main exit from the room or space stating the number of occupants permitted within such space. The number of occupants permitted shall be determined by 780 CMR: *The Massachusetts State Building Code*. Assembly rooms or spaces which have multiple use capability shall be posted for all such uses. The owner shall be responsible for installing and maintaining such signs.

10.17: continued

- (d) Overcrowding. No person shall permit overcrowding or admittance of any person beyond the established posted occupant load of any place of assembly or education. The head of the fire department, upon finding overcrowded conditions or obstruction in aisles, passageways or other means of egress, or finding any condition which constitutes a hazard to life and safety shall cause the performance, presentation, spectacle or entertainment to be stopped until the area posted occupant load is re-established or the obstruction or hazardous condition is removed.
- (2) Decorative Material. Decorative materials shall conform to 527 CMR 21.00 and 780 CMR.
- (3) Motion Picture Screens. In places of assembly or education, a motion picture screen or screen masking shall not be used which will ignite and allow flame to spread over the surface when exposed to the test method test described in 527 CMR 21.00.
- (4) Means of Egress.
- (a) General. The operator or the person in charge of operation or use of any place of assembly or education shall check egress facilities before such building is occupied for any use, to determine compliance with the provisions of 527 CMR 10.17. If such inspection reveals that any element of the required means of egress is obstructed, inaccessible, locked, fastened or otherwise unsuited for immediate use, admittance to the building shall not be permitted until necessary corrective action has been completed.
 - (b) Doors. An egress door shall not be locked, bolted or otherwise fastened or obstructed by any means, so that the door cannot be opened from the inside by the use of the ordinary door latch or knob or by pressure on the door or on a panic release device except as provided in 780 CMR.
 - (c) Aisles. In each room where chairs, or tables and chairs, are used the arrangement shall be such as to provide for ready access by aisles to each egress door. Aisles leading directly to an egress door shall have not less than 44" clear width. When serving an occupant load of 50 or less, such required clear width shall not be less than 36". Aisles shall not be obstructed by chairs, tables or other objects.
 - (d) Obstructions. A part of a stairway, whether interior or exterior, or of a hallway, corridor, vestibule, balcony or bridge leading to a stairway or exit shall not be used in any way that will obstruct or restrict its use as a means of egress or that will present a hazardous condition.
 - (e) Signs and lighting. The signs and lighting of means of egress required for places of assembly or education shall be maintained in proper operating condition and be installed in accordance with 780 CMR.
- (5) Projection Rooms.
- (a) Refer to 780 CMR.
 - (b) Miscellaneous equipment: A maximum of four flammable liquid containers that do not have a capacity greater than 16 ounces and are of a nonbreakable type shall be permitted in each projection room.

10.18: Matches

- (1) General.
- (a) Scope. The storage or handling of matches in quantities as indicated herein shall comply with the applicable requirements of 527 CMR 10.00 and the provisions of 527 CMR 10.18.
 - (b) Permit required. A permit shall be obtained from the head of the fire department for the manufacture or storage of matches exceeding 25 cases in aggregate.
- (2) Fire Safety Requirements.
- (a) Wholesale storage. At wholesale establishments and wherever more than 25 cases of matches are stored, shipping containers containing matches shall be arranged in piles not exceeding 18' in height nor 25,000 cubic feet in volume. Such pile units shall be separated from each other and from other combustible material by a clear space of not less than four feet. Matches shall not be stored within ten feet of any exit, open stairway, elevator shaft opening or other vertical opening.

**THE COMMONWEALTH OF MASSACHUSETTS**William Francis Galvin
Secretary of the Commonwealth**Regulation Filing** *To be completed by filing agency*CHAPTER NUMBER: 527 CMR 22.00CHAPTER TITLE: Cannon or Mortar FiringAGENCY: Board of Fire Prevention RegulationsSUMMARY OF REGULATION: *State the general requirements and purposes of this regulation.*

This regulation governs the firing of muzzle-loading cannons during patriotic celebrations and re-enactments, and covers all such artillery ranging from pre-Revolutionary War vintage to present-day facsimiles.

This particular amendment updates current safety standards and references and improves readability.

REGULATORY AUTHORITY: M.G.L. c. 22D, s. 4 and c. 148, s. 9,10 and 28AGENCY CONTACT: Peter A. Senopoulos PHONE: 978-567-3183ADDRESS: Board of Fire Prevention Regulations**Compliance with M.G.L. c. 30A**EMERGENCY ADOPTION - *if this regulation is adopted as an emergency, state the nature of the emergency.*PRIOR NOTIFICATION AND/OR APPROVAL - *If prior notification to and/or approval of the Governor, Legislature or others was required, list each notification, and/or approval and date, including notice to the Local Government Advisory Commission.*

Executive Order 485 approval: 8-24-09

Executive Order 145 notice (Local Govt. Advisory Commission): 8-25-09

PUBLIC REVIEW - *M.G.L. c. 30A sections 2 and/or 3 requires notice of the hearing or comment period be filed with the Secretary of the Commonwealth, published in appropriate newspapers, and sent to persons to whom specific notice must be given at least 21 days prior to such hearing or comment period.*Date of public hearing or comment period: October 1, 2009

FISCAL EFFECT - *Estimate the fiscal effect of the public and private sectors.*

For the first and second year: no additional effect

For the first five years: none

No fiscal effect: _____

SMALL BUSINESS IMPACT - *State the impact of this regulation on small business. Include a description of reporting, record keeping and other compliance requirements as well as the appropriateness of performance versus design standards and whether this regulation duplicates or conflicts with any other regulation. If the purpose of this regulation is to set rates for the state, this section does not apply.*

No impact

CODE OF MASSACHUSETTS REGULATIONS INDEX -
Canon and mortar firings

List key subjects that are relevant to this regulation:

PROMULGATION - *State the action taken by this regulation and its effect on existing provisions of the Code of Massachusetts Regulations (CMR) or repeal, replace or amend. List by CMR number.*

Amends existing regulation

ATTESTATION - *The regulation described herein and attached hereto is a true copy of the regulation adopted by this agency.* ATTEST:

SIGNATURE: _____

DATE: 10-7-09

Publication - *To be completed by the Regulations Division*

MASSACHUSETTS REGISTER NUMBER: 1142

DATE: 10/30/09

EFFECTIVE DATE: 10/30/09

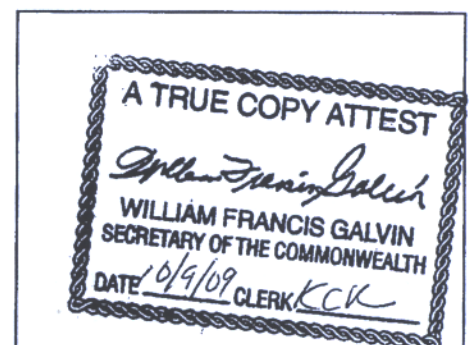
CODE OF MASSACHUSETTS REGULATIONS

Remove these pages:

Insert these pages:

217 - 222

217 - 222



527 CMR 22.00: CANNON OR MORTAR FIRING

Section

- 22.01: Purpose and Scope
- 22.02: Definitions
- 22.03: Permits
- 22.04: Certificates of Competency
- 22.05: Range Conditions and Other Pre-firing Requirements
- 22.06: Magazines and Powder
- 22.07: Firing of Cannons
- 22.08: General Provisions

22.01: Purpose and Scope

- (1) 527 CMR 22.00 governs the firing of muzzle-loading cannons during patriotic celebrations and re-enactments, including all such cannons ranging from pre-Revolutionary War vintage to present-day facsimiles.
- (2) 527 CMR 22.00 shall not apply to any cannon exhibit in which explosives are not being used.
- (3) Ammunition for any cannon shall be subject to all the applicable requirements contained in 527 CMR 13.00.

22.02: Definitions

The following terms shall have the meanings assigned to them unless the context clearly indicates otherwise:

Blank-fire. The supervised discharge of a cannon or mortar without projectile.

Cannon. Any gun designed to be fired from a carriage resting on the ground and which is loaded from the muzzle with rigid non-combustible black powder cartridge.

Competent Operator. A person at least 21 years of age who holds a current Certificate of Competency for cannon firing issued by the State Fire Marshal.

Display. The supervised discharge of cannon or mortar, whether blank-fire without projectile or live-fire with projectile.

Head of the Fire Department. As defined in M.G.L. c. 148, § 1.

Live-fire. The supervised discharge of cannon or mortar with projectile.

Marshal. The State Fire Marshal, as defined in M.G.L. c. 148, § 1.

Mortar. Any cannon whose length is less than six times its bore diameter, or any cannon fired at an elevation of 45° or more from the horizontal.

Range. An area designated for the discharge of various weapons, having a minimum unobstructed length of 100 yards, a minimum unobstructed width of 25 yards, equipped with a natural or manmade down range barrier a minimum of ten feet in height.

22.03: Permits

- (1) A permit for the supervised firing of a cannon shall be issued by the head of the fire department on permit forms furnished the fire departments by the Marshal.

22.03: continued

- (2) An application for permit for supervised firing shall be submitted to the head of the fire department in the municipality where the supervised firing is to take place not less than 15 days in advance of firing date, and shall state whether blank-fire or live-fire. Submission of this application is an assurance that the cannons to be fired will be inspected by the competent operator and meets all safety requirements prior to firing.
- (3) Upon receipt of application, the head of the fire department shall make an investigation of the pertinent facts set forth in application for the purpose of determining compliance with all provisions of law and of 527 CMR 22.00. Upon completion of the investigation, the head of the fire department shall transmit one copy of application to the Marshal and one copy to the applicant with his endorsement thereon in compliance with provisions of law, or his reason for withholding such endorsement.
- (4) No permit shall be issued for the supervised discharging of cannon with or without projectile unless the applicant exhibits a Certificate of Competency for Cannon Firing.
- (5) No permit granted for a specific display shall be transferable.

22.04: Certificates of Competency

- (1) The firing of any cannon, with or without projectile, shall be under the direct control of competent operator who holds a current Certificate of Competency issued by the Marshal.
- (2) Any person desiring to obtain a Certificate of Competency shall make written application to the Marshal and shall submit to such examination and test as the Marshal may prescribe. Such certificate if issued shall continue in effect for a period of five years, and may be renewed upon prior written request of the holder, provided it has not been suspended or revoked by the Marshal.
- (3) Any violation of 527 CMR 22.00 or the conditions of a permit may be cause for immediate revocation of Certificate of Competency.

22.05: Range Conditions and Other Pre-firing Requirements

- (1) No cannon shall be fired with ball, shot or projectile unless a permit for live firing has been obtained from the head of the fire department and only on ranges approved by the head of the fire department. Such ranges shall be clear and unobstructed between discharge point and target area and for a safe distance to the rear of target in event of an overshoot. The target area shall not exceed 250 yards from the point of discharge.
- (2) There shall be no permanent building, public highway, railroad, or other public way within the forward sector of a 180° arc having a radius of 100 feet from the muzzle of the cannon. A similar sector of 180° directed toward the rear 75 feet in radius shall be clear of all public ways, permanent buildings, or other obstructions.
- (3) It shall be the responsibility of the competent operator to determine that the area in which the display is to be conducted is safe and that all operations are conducted in compliance with the requirements of 527 CMR 22.00. The competent operator, head of the fire department, the Marshal, or his authorized representative may order postponement of the display for any violation of 527 CMR 22.00, or for any other reason related to public safety.
- (4) No discharging of any cannon shall be permitted during any windstorm in which the direction and velocity of the wind renders the display dangerous to the public safety and/or surrounding property.
- (5) There shall be no discharging of cannon between the hours of sunset and sunrise without prior written approval from the head of the fire department.

22.05: continued

- (6) The head of the fire department shall designate the location and type of fire extinguishing equipment as may be required.
- (7) No firing of any cannon may be conducted unless the crew is present in adequate numbers for the particular cannon or mortar. The competent operator shall be responsible to insure that all members of the crew have been fully trained in the safe operation of the cannon or mortar.
- (8) No member of the gun crew shall be under 18 years of age.
- (9) Smoking shall be prohibited in the discharge area.
- (10) No member of the audience shall be allowed in the forward or flank zone of the muzzle of a cannon firing a projectile within a forward sector of 180° having a radius of 150% of the estimated range of the piece.
- (11) The audience at a supervised firing of cannon shall be restrained behind lines 60 feet on the flank area back of the muzzle and 60 feet to the rear of the gun.
- (12) Unless otherwise allowed by the Marshal, no piece shall be discharged with blank ammunition unless all spectators are at a safe distance from the front of the piece and at least 60 feet to the rear or flank. Adjacent pieces shall be at a safe interval.

22.06: Magazines and Powder

- (1) All ammunition for cannon shall be transported and temporarily stored at the firing location in the finished state in a portable magazine. Such magazine shall be constructed of at least 24-gauge sheet metal lined with a minimum of ¾ inch marine plywood or other non-sparking material, and shall be of sturdy sealed construction held together with non-sparking fastenings. A suitable lock and hasp of non-sparking material shall be provided.
- (2) In the discharge area, a ready-service box constructed of wood with non-sparking fastenings and cover designed to be self-closing shall be positioned at ground level approximately 25 feet to the rear of the piece being served with the hinges toward the piece.
- (3) All magazines and ready-service boxes shall be closed prior to the loading of each cartridge of the piece being served and adjacent pieces. Ready-service boxes for each gun should contain the minimum number of cartridges required for the gun during that particular display. Magazines and ready-service boxes shall at all times be under the control of a competent member of the gun crew.
- (4) No loose or bulk powder other than priming powder in quantities not exceeding ½ ounce shall be used in the firing of any cannon, and no loose or bulk powder shall be transported or stored in any portable magazine with cartridges.
- (5) Cartridge. Blank artillery cartridges shall be made up of Black Powder only, not to exceed 4 oz. per inch of largest bore diameter. Cartridges must have a minimum of three wraps of heavy-duty aluminum foil and be packed to a firm consistency.
Only cannon grade, 1F, or 2Fg black powder will be used. Powder grades cannot be mixed. No artillery cartridges shall be constructed at the event site. No wadding of any kind is permitted in blank firing
- (6) The amount of black powder used in each cartridge shall be such as to not present an undue hazard to persons, property, or the piece itself.
 - (a) Powder cartridges for cannons shall not exceed four ounces of powder per inch of bore diameter.
 - (b) Powder cartridges for mortars shall not exceed four ounces of powder per inch of chamber diameter.

22.07: Firing of Cannons

- (1) No torch shall be used to ignite any cartridge to be fired from a cannon.
- (2) All cannons used to fire a projectile shall be provided with an instant source of ignition such as an electrical squib or bridge wire or percussion cap or other approved instant firing device. Exception to the foregoing shall apply to the use of fuses for the firing of mortars.
- (3) No firing of any steel or iron cannon or mortar shall be conducted unless the weapon contains a seamless steel safety sleeve with breech plug, designed for such firing and have had a boroscope inspection conducted by a qualified person. Original guns and bronze guns may be used without a safety sleeve, provided that they have had a boroscope inspection conducted by a qualified person. Pits, scratches, or other defects more than 3/16 inch deep shall render the cannon unusable.
 - (a) Cannons and mortars used for live firing shall have a boroscope inspection conducted at least once every five years.
 - (b) Cannons and mortars used exclusively for blank firing shall have a boroscope inspection conducted at least once every ten years.
- (4) Projectiles shall not be so constructed as to develop any unsafe pressures; and no combustible, explosive, or pyrotechnic projectiles may be used.
- (5) Reloading shall not commence until the worming and wet sponging has been completed after firing.
- (6) The piece shall be wormed and wet sponged between shots and the vent stopped from the time the worm enters the muzzle until the rammer is removed from the bore after the cartridge is rammed in blank-firing, or the projectile is rammed in live-firing.
- (7) At no time shall any cannon be left unattended while loaded or during a misfire until the piece has been cleared.
- (8) In the event of a misfire, the competent operator shall take the following steps:
 - (a) The gunner shall give an audible warning.
 - (b) No personnel shall approach the front of the muzzle.
 - (c) A mandatory three minute cooling off period shall be observed.
 - (d) The piece shall be re-primed from a safe position and a repeated attempt made to fire the piece.
 - (e) If the attempt to re-fire the piece is unsuccessful, the piece shall be flooded with water through the vent and allowed to soak for a period of at least one hour unless the water or compressed gas can be used to flush the cartridge out of the muzzle.
 - (f) The projectile and/or cartridge shall be removed through the muzzle.
- (9) If, after a display, the competent operator has reason to believe that there are any unignited charges or remnants thereof containing explosives in the area, he shall make a thorough search of the area for such explosives. The responsibility for disposition of it shall be assumed by the competent operator.

22.08: General Provisions

Any explosion, fire, or other accident occurring in connection with the keeping, storage, manufacture, handling, transportation, supervised display or other disposition of ammunition for cannon causing loss of life or injury to any person or damage to property shall be immediately reported to the Marshal by the competent operator, giving a detailed account of same and confirmed in writing.

REGULATORY AUTHORITY

527 CMR 22.00: M.G.L. c. 22, § 14; c. 148, §§ 9 and 10.